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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/473,176 | 12/28/1999 | ALAN STUART FELDMAN | 66180.0400/H | 9679 |

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HONEYWELL INC
HONEYWELL PLAZA MN12 8251
P O BOX 524
MINNEAPOLIS, MN 55440

EXAMINER

ROY, SIKHA

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 12/07/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/473,176

Applicant(s)

FELDMAN, ALAN STUART

Examiner

Sikha Roy

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

The disclosure is objected to because of the following informality:

Page 17 line 5, in abstract, "has channel" should be replaced by --having channel--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5,7,8,10, 11,13,15-18,21-24,26-28,30, 31, 33 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent 5,343,116 to Winsor.

Referring to claims 1, 7,8,13,21,22,26, 27, 30 and 31 Winsor discloses (column 2 lines 48-62 Fig. 1) a planar fluorescent lamp comprising an enclosure formed of a pair of side walls 18 and 20 and a pair of end walls 14 and 16. A plurality of divider walls 26 extend from the sidewall 14 towards the sidewall 16 but do not touch it. Similarly the divider walls 28 extend from the sidewall 16 towards the sidewall 14 but do not contact it. These divider walls create channels, each channel having two ends towards the two end walls 14 and 16. A plurality of electrodes (38a- 38c, 40a- 40c Fig. 4) is positioned

adjacent each sidewall and at two ends of the channel segments (column 3 lines 24-33). The fluorescent lamp further includes a phosphor layer within the sealed chamber such that the UV radiation emitted by plasma arc directly impinges on the phosphor layer (column 8 lines 67,68, column 9 lines 1,2)

Referring to claims 2 and 16, Winsor discloses (column 2 lines 60,61) the interior (divider) walls 26, 28 inside the enclosure defining the channel (path) through the discharge chamber.

Referring to claims 3 and 4, Winsor teaches (column 1 lines 58-60, Fig. 4) that the sidewall electrodes extend generally from one divider wall to the other divider wall so that the first end (towards the top wall 16) of adjacent first channel and second channel segments coincide in a common electrode area 40a, 40b and the second end (towards the bottom wall 14) of adjacent first and second channel segments coincide in a common electrode area 38a, 38b.

Claims 17 and 18 essentially recite the same limitations of claims 3 and 4 and hence are rejected for the same reason.

Referring to claims 5, 19, 28, Winsor discloses (column 3 lines 39-41) a reflective film applied to the bottom plate of the planar fluorescent lamp to increase the light output.

Referring to claims 10 and 11 Winsor discloses (column 2 lines 60,61) that the plurality of the divider walls in the flat (planar) fluorescent lamp defines a serpentine channel (path) through the discharge chamber. Claims 23, 24 and 33, 34 essentially

recite the same limitations and hence are rejected for the same reasons as claims 10 and 11.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6,20 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 5,343,116 to Winsor in view of U. S. Patent 4,978,888 to Anandan et al.

Referring to claims 6,20 and 29 Winsor ('116) does not disclose the reflective material, coating a portion of the enclosure comprised of at least one of aluminium and ceramic.

Anandan et al. in relevant art of flat fluorescent lamp disclose (column 2 lines 33,34) the bottom substrate coated with a reflective layer such as a vacuum deposited aluminum layer. Aluminum being a good reflecting material increases the lamp's efficiency.

Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to specify the reflective coating of the lamp of Winsor('116) as made of aluminum as suggested by Anandan et al. for increasing the lamp's efficiency.

Claims 9,14,15 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 5,343,116 to Winsor in view of U. S. Patent 5,818,164 to Winsor.

Claims 9,14,15 and 32 differ from Winsor ('116) in that Winsor ('116) does not exemplify the lid partially coated with fluorescent material, positioned opposite to the base and attached to exterior wall

Winsor ('164) in analogous art of fluorescent lamp with electrode housing discloses (column 3 lines 35-37, column 4 lines 14-17 Fig. 2) a transparent lid (cover 50) on the lamp body mating to the upper edges of the side walls and end wall positioned opposite to the bottom end. The lower surface of the lid (cover) is coated with fluorescent layer so that light is emitted from the top.

Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to modify the top end of the flat lamp of Winsor ('116) by a transparent lid coated with fluorescent material as taught by Winsor ('164) for increasing the light output.

Claims 12,25 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 5,343,116 to Winsor in view of U. S. Patent 6,218,776 to Cull et al.

Winsor ('116) does not disclose the portion of the channel formed by the divider walls having asymmetric cross section.

Cull et al. in analogous art of flat fluorescent lamp disclose (column 4 lines 9-20) in Figs. 3D-E the diffuse channels having cross section that is asymmetrical and a channel wall formed such that the top portion tapers inward toward the diffuse channel

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cavity. It is further noted that this type of design yields a concentrated cone of light corresponding to a desired range of viewable angles.

Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to modify the serpentine channels of Winsor's lamp by the one having asymmetrical cross section as taught by Cull et al. for yielding a concentrated cone of light corresponding to a desired range of viewable angles.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following prior art references are cited to show the state of the art with reference to flat fluorescent lamps with discharge channels.

U. S. Patent 5,463,274 to Winsor.

U. S. Patent 5,767,618 to Maya et al.

U. S. Patent 5,903,096 to Winsor.

JP 06260144 to Kobayashi.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (703) 308-2826. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (703) 305-4794. The fax phone number for the organization is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

S.R.

Sikha Roy
Patent Examiner
Art Unit 2879


ASHOK PATEL
PRIMARY EXAMINER